Science – Chemistry

MAGHULL HIGH SCHOOL – CURRICULUM MAP



Lessons Sequence					
 The Earth's resou Potable water Analysis and purif samples (required Waste water treat State examples of replaced by agricu Distinguish betwee appropriate inforr Extract and interp graphs and tables Use orders of mag Distinguish betwee Describe the diffe salty water and gi Describe the proc potable Comment on the waste, ground and Describe the proc potable Comment on the made from plastic Evaluate ways of the 	ication of water I practical) inatural products that ultural and synthetic pr en finite and renewab mation. The information about gnitude to evaluate the en potable water and rences in treatment of ve reasons for each ste ess of treating waste w relative ease of obtain d salt water esses of phytomining a om low grade ores ut simple comparative c and paper reducing the use of lim	 6. Life cycle asses 7. Recycling 8. Corrosion and 9. Alloys as usefue are supplemented or roducts le resources given resources from charts, e significance of data pure water ground water and p vater to make it ing potable water from and bioleaching to LCAs for shopping bags 	it's prevention il materials Describe experimair and water ar Explain sacrificia Recall a use of s Interpret and exported and the other than those Compare quantic clay ceramics, p Explain how the uses and select Apply the princing reactions and dy Explain the trad of equilibrium Explain how the process are related materials and end Recall the name is treated with r	11. The Haber pr 12. NPK fertilised ments and interpret r re necessary for rustin al protection in terms pecific alloys valuate the compositi e specified given appr itatively the physical olymers, composites properties of materials ples of dynamic equilibrium to e-off between rate of commercially used of ted to the availability nergy supplies s of the salts produced hitric acid, sulphuric a dustrial production of	rs results to show that bot of relative reactivity on and uses of alloys ropriate information properties of glass and and metals als are related to their s librium in Reversible the Haber process f production and positic onditions for the Haber r and cost of raw ed when phosphate rock fertilisers with
throughout topic	Teacher assessment of practical skills during investigation -	Knowledge Recall Quizzes	appropriate info Deep marking of written task in students books	ormation Topic Test	Targeted exam questions – teache or self-assessed
	 The Earth's resou Potable water Analysis and purif samples (required Waste water treat State examples of replaced by agricu Distinguish betwee appropriate inforr Extract and interp graphs and tables Use orders of mag Distinguish betwee Describe the diffe salty water and gi Describe the proc potable Comment on the waste, ground and Describe the proc extract copper fro Be able to carry o made from plastic Evaluate ways of n appropriate inforr 	1.The Earth's resources2.Potable water3.Analysis and purification of water samples (required practical)4.Waste water treatment•State examples of natural products that replaced by agricultural and synthetic pro- Distinguish between finite and renewab appropriate information.•Extract and interpret information about graphs and tables•Use orders of magnitude to evaluate the Distinguish between potable water and Describe the differences in treatment of salty water and give reasons for each ster Describe the process of treating waster v potable•Comment on the relative ease of obtain waste, ground and salt water•Describe the processes of phytomining a extract copper from low grade ores•Be able to carry out simple comparative made from plastic and paper•Evaluate ways of reducing the use of lim appropriate information	1. The Earth's resources 5. Alternative me 2. Potable water 6. Life cycle asset 3. Analysis and purification of water samples (required practical) 8. Corrosion and 4. Waste water treatment 9. Alloys as usefu • State examples of natural products that are supplemented or replaced by agricultural and synthetic products • Distinguish between finite and renewable resources given appropriate information. • Extract and interpret information about resources from charts, graphs and tables • Use orders of magnitude to evaluate the significance of data • Distinguish between potable water and pure water • Describe the differences in treatment of ground water and salty water and give reasons for each step • Describe the process of treating waste water to make it potable • Comment on the relative ease of obtaining potable water from waste, ground and salt water • Describe the processes of phytomining and bioleaching to extract copper from low grade ores • Be able to carry out simple comparative LCAs for shopping bags made from plastic and paper • Evaluate ways of reducing the use of limited resources, given appropriate information	1. The Earth's resources 5. Alternative methods to extract metals 2. Potable water 6. Life cycle assessments 3. Analysis and purification of water samples (required practical) 8. Corrosion and it's prevention 4. Waste water treatment 9. Alloys as useful materials • State examples of natural products that are supplemented or replaced by agricultural and synthetic products • Describe experia air and water are exprised appropriate information. • Extract and interpret information about resources from charts, graphs and tables • Interpret and exother are clay caramics, period caramics, p	1. The Earth's resources 5. Alternative methods to extract metals 10. Ceramics, po 2. Potable water 6. Life cycle assessments 11. The Haber p 3. Analysis and purification of water samples (required practical) 7. Recycling 12. NPK fertilise 4. Waste water treatment 9. Alloys as useful materials 12. NPK fertilise • State examples of natural products that are supplemented or replaced by agricultural and synthetic products • Describe experiments and interpret r air and water are necessary for rustir • Distinguish between finite and renewable resources given appropriate information. • Describe experiments and interpret r air and water are necessary for rustir • Describe the differences in treatment of ground water and salty water and give reasons for each step • Explain how the properties of material • Describe the process of treating waste water to make it potable • Describe the process of phytomining and bioleaching to extract copper from low grade ores • Explain how the commercially used c process are related to the availability materials and energy supplies • Be able to carry out simple comparative LCAs for shopping bags made from plastic and paper • Recall the names of the salts product is treated with nitric acid, suphruica • Evaluate ways of reducing the use of limited resources, given appropriate information • Compare the industrial production of laboratory preparations of the same appropriate information • Evaluate ways of

SMSC / Promoting	Effect of fly-tipping on the environment				
British Values	 Impact of drinking dirty water on health in other countries 				
(Democracy, Liberty, Rule of	 Listening to others during presentations 				
Law, Tolerance & Respect)	Working in groups during practicals or research tasks				
Reading	News articles				
opportunities	Recommended Read: All About Chemistry (Big Questions) (Robert Winston)				
Key Vocabulary	Independent Variable, Dependent Variable, Control Variables, Method, Conclusion, Precaution, Evaluation, Reliable, Precision, Valid, Anomaly, Describe, Explain, Compare, Analyse, Calculate, Suggest				
	Agriculture, Potable, Microbe, Pure, Ground Water, Distillation, Filtration, Sterilisation, Sedimentation, Finite, Limited, Phytomining, Bioleaching, Alloy, Composition, Physical, Properties, Composites, Polymers, Commercial, Industrial, Fertilisers				
Digital Literacy	SharePoint resources including topic quizzes				
	Possible use of excel to plot graphs and analyse data, powerpoint, word, etc to present information, internet for research				
Cross-Curricular Links	Numeracy/Maths – averages (means), reading scales, graph plotting, lines of best fit, using and rearranging equations, using scientific calculators				
Careers	Environmental scientists, politicians, water treatment workers, careers within companies like united utilities, metal workers and mining, chemical manufacturing				